

Degree Requirements of MSc (Safety, Health and Environmental Technology) (for cohorts AY2021/2022 and Sem 1, AY2022/2023)

The Master of Science (Safety, Health and Environmental Technology) Degree programme, or MSc (SHE), is hosted by the Department of Chemical and Biomolecular Engineering. The programme accepts both full-time and part-time students. To qualify for the MSc (SHE) Degree with or without specialisation, a candidate must successfully complete a programme of study consisting of at least 40 Units. Of the 40 Units, at least 30 Units must be at graduate level within the stipulated SHE Courses or in a related discipline, the remaining units may be from other levels in the same or other disciplines as approved by the Department. In addition, a student must obtain a minimum GPA of 3.0 (Grade B-) for the best courses equivalent to 40 Units. A student may choose to graduate with one of the following:

- MSc (SHE) Degree
- MSc (SHE) Degree with General Practice Specialisation
- MSc (SHE) Degree with Industrial Hygiene Specialisation
- MSc (SHE) Degree with Process Safety Specialisation

Courses for the MSc (SHE) Degree Programme*

Programme courses are presented in the following three groups.

(i) General Practice Courses

SH5002	Fundamentals in Industrial Safety
SH5003	Fundamentals in Environmental Protection [^]
SH5005	Risk Analysis & Safety Analytics
SH5108	Chemical Hazard Management
SH5204	Industrial Safety Engineering
SH5402	Safety Leadership and Management Practices
SH5403	Independent Study [#]
SH5404	Safety Health and Environmental Project (8 Units) [#]
SH5405	Fire and Explosion Safety
SH5406	Research Methodology [#]
SH5407	Sustainable Energy and Environment ^{+^}
SH5408	Electrical Safety
SH5409	Sustainability and Environmental Analysis ⁺
SH5666	Industrial Safety, Health and Environmental Practices (8 Units) [#]
SH5880	Topics in Industrial Hygiene
SH5881	Topics in Process Safety
SH5882	Topics in Environmental Protection

(ii) Industrial Hygiene Courses

SH5004	Fundamentals in Industrial Hygiene
SH5101	Industrial Toxicology
SH5102	Occupational Ergonomics
SH5103	Biosafety and Biosecurity
SH5104	Occupational Health
SH5105	Noise and Other Physical Hazards
SH5106	Radiation Safety
SH5107	Industrial Ventilation
SH5109	Biostatistics and Epidemiology
SH5110	Chemical Hazard Evaluation

(iii) Process Safety Courses

SH5001	Fundamentals in Process Safety
SH5201	Process Hazard Analysis
SH5202	Quantified Risk Analysis
SH5203	Resilience and Emergency Planning
SH5205	Crisis and Incident Management
SH5206	Human Factors in Process Safety
SH5207	Process Safety Engineering
SH5208	Functional Safety for Process Industries
SH5209	Process Safety Digitalization [#]
SH5401	Safety, Health, Environment & Quality Management System

The MSc (SHE) Degree graduation requirements are stipulated below:

MSc (SHE) Degree

A candidate (full-time and part-time) must successfully complete a programme of study consisting of at least 40 Units. Of the 40 Units, at least 30 Units must be at graduate level within the stipulated SHE Courses or in a related discipline, the remaining units may be from other levels in the same or other disciplines as approved by the Department.

MSc (SHE) Degree with General Practice Specialisation

A candidate (full-time and part-time) must successfully complete a programme of study consisting of:

- a) at least 3 courses from (ii) Industrial Hygiene Courses,
- b) at least 3 courses from (iii) Process Safety Courses, and
- c) any remaining courses from (i) General Practice Courses, (ii) Industrial Hygiene Courses, (iii) Process Safety Courses, and up to 2 other courses subjected to the approval of the Department.

MSc (SHE) Degree with Industrial Hygiene Specialisation

A candidate (full-time and part-time) must successfully complete a programme of study consisting of:

- a) at least 6 courses from (ii) Industrial Hygiene Courses,
- b) at least 2 courses from (iii) Process Safety Courses, and
- c) any remaining courses from (i) General Practice Courses, (ii) Industrial Hygiene Courses, (iii) Process Safety Courses, and up to 2 other courses subjected to the approval of the Department.

MSc (SHE) Degree with Process Safety Specialisation

A candidate (full-time and part-time) must successfully complete a programme of study consisting of:

- a) at least 6 courses from (iii) Process Safety Courses,
- b) at least 2 courses from (ii) Industrial Hygiene Courses, and
- c) any remaining courses from (i) General Practice Courses, (ii) Industrial Hygiene Courses, (iii) Process Safety Courses, and up to 2 other courses subjected to the approval of the Department.

Note: All courses are worth 4 Units each except SH5404 and SH5666 are worth 8 Units.

* Not all courses are necessary available in any one year.

100% Continuous Assessment course (no final exam)

^ Courses that are also offered to BEng (Chem Eng) undergraduate students

+ Courses that are also offered to MSc Energy System graduate students